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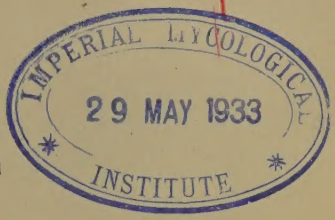

UREDINEÆ

EXSICCATÆ ET ICONES

BY
J. C. ARTHUR
AND
E. W. D. HOLWAY

FASCICLE III

DECORAH, IOWA
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PREFACE TO FASCICLE III.

This series of dried specimens of American *Uredineæ* is issued in facicles of unequal size. The first fascicle was issued in September, 1894, and contained seventeen species (Nos. 1 to 17), represented by thirty-one packets, and accompanied by photo-engraved drawings of the spores. The second fascicle was issued in December, 1898, and contained seventeen species (Nos. 18 to 34), represented by fifty-five packets (erroneously stated in the preface of fascicle II to be fifty-two), and accompanied both by photographs and by photo-engraved drawings. The present fascicle contains ten species (Nos. 35 to 44), represented by twenty-eight packets, with photographs and photo-engraved drawings.

The drawings are all made directly from the material of the distribution, every packet being illustrated. They are numbered to correspond with the packets, and arranged on the plate so that they may be cut apart readily and mounted with the specimens on the herbarium sheet, if desired. All drawings are made with an Abbe camera lucida, under a uniform magnification of 625 diameters, and reduced to 470 diameters in engraving.

Thirteen photographs accompanied fascicle two, two of which were of twigs and leaves bearing æcidia, shown natural size, and the remainder were of spores. In the present fascicle are thirteen photographs, all of spores. The photographs are made directly from the material of the distribution, those of spores being magnified 250 diameters.

The essentially correct dimensions of the spores may be obtained by taking measurements in millimeters from the drawings and multiplying by two, or from the photographs and multiplying by four, the results being in microns (μ).

The first fascicle was devoted exclusively to *Lepto-Uredineæ*; the second and present fascicles contain species having their uredospores and teleutospores on hosts belonging to the *Gramineæ*; and the fascicle to follow will be of the same character. The hosts of the ten collections made in Mexico were determined by Mr. F. L. Scribner, agrostologist in the U. S. Department of Agriculture. Britton and Brown's *Illustrated Flora* has been followed in the nomenclature of hosts for this fascicle.

The attempt is made to have the fascicles approximately uniform

in value, but this is not done by including a fixed number of packets, as is customary, but by looking after the quality, rarity and desirability of the forms, by providing examples for comparison of the different stages and hosts in the same species, and by illustrations. In order to carry out this intention to the fullest extent possible, it is sometimes necessary to include packets scantily supplied with material, or in which the material was not collected at its best. But all such deviations from a high standard of quality are to be accepted as concessions to the necessity for providing the amplest material for study, and such as we offer is the best that could be secured.

Signs are used on the packets and elsewhere to indicate the kind of spores represented in the particular gathering, and their comparative abundance. The signs are as follows:

O, Spermatia.
I, Æcidiospores.
II, Uredospores.
III, Teleutospores.
X, Amphispores.

When printed in large type, they show that the spores occur abundantly in well formed sori; when printed in small type, the spores form few sori or are scattered among the sori of other sorts of spores.

The fascicle has been enriched by contributions from Miss Lillian Snyder and Messrs. Elam Bartholomew, Wm. Stuart, J. M. Bates and E. T. Harper, to whom the editors extend thanks.

Descriptions of every species in the series, and a running commentary have been provided in an independent publication, entitled "Descriptions of American Uredineæ", printed in the *Bulletin of the Laboratories of Natural History of Iowa University*. Separates have been distributed and additional copies may be purchased. The "Descriptions" for the species of the first fascicle are in volume III, pages 44 to 75, those of the second fascicle in volume IV, pages 377 to 405, and those of the present fascicle in volume V, pages 171 to 193.

The edition of this fascicle is limited to fifty copies, which are issued either in loose packets or in well bound octavo volumes, as subscribers may prefer.

THE EDITORS.

CONTENTS OF FASCICLE III.

An asterisk before the number indicates that the specimen is accompanied by a photograph.

GRAMINEOUS TRIBE MAYDEÆ.

*35a. **Puccinia Tripsaci** D. & H., X, iii, on *Tripsacum dactyloides*, Mex.

36a. " **polysora** Und., II, on " " "

GRAMINEOUS TRIBE ANDROPOGONEÆ.

37a. **Puccinia virgata E. & E., ii, III, on *Chrysopogon avenaceus*, Kans.

*38a. " **Ellisiana** Thuem., III, on *Andropogon scoparius*, "

*38b. " " ii, III, on " " Iowa

39a. " **Andropogonis** Schw., o, I, on *Pentstemon hirsutus*, Ind.

39b. " " I, on " *albidus*, Kans.

39c. " " o, I, on " *grandiflorus*, Neb.

*39d. " " II, iii, on *Andropogon scoparius*, Iowa.

39e. " " III, on " " Ind.

39f. " " ii, III, on " " "

39g. " " II, iii, on " *furcatus*, Iowa.

*39h. " " ii, III, on " " Ind.

39i. " " III, on " " Iowa

39j. " " ii, III, on " " Kans.

39k. " " ii, III, on " *Hallii*, Neb.

*40a. " **versicolor** D. & H., III, on " *melanocarpus*, Mex.

40b. " " ii, III, on " " "

40c. " " II, iii, on " " "

40d. " " II, III, on " *contortus*, "

GRAMINEOUS TRIBE PANICEÆ.

*41a. **Puccinia Cenchri** D. & H., ii, III, on *Cenchrus multiflorus*, Mex.

42a. " **substriata** E. & B., II, III, on *Paspalum setaceum*, Kans.

*42b. " " II, iii, on " *paniculatum*, Mex.

*42c. " " ii, III, on *Pennisetum Mexicanum*, "

42d. " " ii, III, on " " "

GRAMINEOUS TRIBE ORYZEÆ.

*43a. **Uromyces Halstedii** DeT., II, III, on *Homalocenchrus Virginicus*, Wis.

GRAMINEOUS TRIBE PHALARIDEÆ.

44a. **Puccinia Majanthae** (Schum.) A. & H., o, I, on *Polygonatum commutatum*. Iowa

*44b. " " II, III, on *Phalaris arundinacea*, Mich.